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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,057	07/09/2002	Mercedes Alvaro Rodriguez	U 013829-3	8694
140	7590	04/15/2004	EXAMINER	
LADAS & PARRY 26 WEST 61ST STREET NEW YORK, NY 10023			KOPEC, MARK T	
			ART UNIT	PAPER NUMBER
			1751	

DATE MAILED: 04/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/031,057	ALVARO RODRIGUEZ ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Mark Kopec	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3 is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                                    |

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This application is a 371 of PCT/ES00/00260 (filed 7/19/00). The preliminary amendment filed 7/9/02 is entered. Claims 1-41 are currently pending.

The abstract of the disclosure is objected to because it is more than one (1) paragraph. Correction is required. See MPEP § 608.01(b).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for

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establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, and 4-41 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Shelef (6,117,581).

Shelef discloses polymer-electrolyte-membrane fuel cell assembly comprising an ionomeric, conducting polymer membrane, an anode on a first face of the polymer membrane, a cathode on a

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second face of the polymer membrane, at least one of the anode and the cathode each comprising catalyst support material comprising conductive zeolite particulate material (Abstract). The conductive zeolite comprises zeolites which have been made conductive by incorporating a conductive material into the channels of the host zeolite. Zeolites are crystalline open framework aluminosilicates which have the general formula:  $M(x/n) [(AlO_{sub.2})_x(SiO_{sub.2})_y]$  wherein M represents a positively charged ion which compensates the negative charge associated with the replacement of a tetravalent Si-ion by a trivalent Al-ion in the zeolite crystal structure. Preferably, M represents a proton that confers high hydrophilic properties to the surface of the zeolite. Zeolites comprise a plurality of one-, two- or three-dimensional channels running throughout the zeolite material. The channels have a diameter of between about 0.3 to about 3 nanometers (nm). The preferred channel diameters required to accommodate the incorporation of conductive materials are in the higher range of pore diameters, such as above about 0.6 nm. The zeolite preferably has a surface area of between about 100 to about 400 m.<sup>sup.2</sup> /g. The zeolites contain acidic protonic entities on its surface and as such is more hydrophilic than carbon. Examples of suitable types of zeolites which may be used include, but are not limited to,

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Linde A, Faujasite, Mordenite, Omega, L, Y, Beta, SAPO-5, ZSM-5, AIPO-5, VPI-5 and **MCM-41**. The conductive material which may be incorporated into the channels of the zeolite comprises conductive polymer, alkaline metal cations, or a combination thereof. Conductive polymers which may be used as the conductive material of the present material include but are not limited to **undoped or doped polyacetylene**, polypyrrole, polythiophene, polyaniline and mixtures thereof. The conductive polymer may be polymerized within the channels of dehydrated zeolite in any manner which is known in the art. Zeolites are considered to be dehydrated when the water, which is typically contained within its channels, has been removed from the channels. This is typically done by heating the zeolite to evaporate the water. Typically, precursor monomers of the desired conductive polymer are introduced into the channels of the dehydrated zeolite host and are subsequently polymerized within the channels by appropriate polymerization catalysts. The polymerization reactions are typically carried out between temperatures of about 298 to about 550K and at pressures between about 10 to 1,000 Torr. To enhance the conductivity of the conductive polymers introduced into the zeolite channels, the polymers can be partially or wholly pyrolyzed. Suitable examples of the manner in which the conductive polymers may be

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polymerized within the channels of the zeolites are disclosed in "Inclusion Of Conducting Polymers In Inorganic Hosts: Toward Conducting Nanostructures", T. Bein and P. Enzel, Intrinsically Conducting Polymers: An Emerging Technology pgs. 51-60, 1993, Kluwer Academic Publishers which is incorporated herein by reference. When the conductive material comprises alkaline metal cations, the channels of zeolite can be doped with "excess electrons" by reacting the cations already contained within the channel with suitable alkaline metal vapors such as, but not limited to, potassium, lithium, sodium, rubidium and cesium, in any suitable manner known in the art. The "excess electrons" are due to the ionization of the incoming alkali metal atoms by the intense electric fields within the zeolite channels. This releases electrons which interact with metal cations present in the zeolites (Col 4, line 29 to Col 5, line 31). The reference, which discloses polymerization of polyacetylene in MCM-41 matrix materials, either specifically or inherently meets each of the claimed limitations.

The reference is anticipatory.

In the event that any minor modifications are necessary to meet the claimed limitations, such as selection of substituted polyacetylene or vapor addition of such, such modifications are well within the purview of the skilled artisan.

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In view of the foregoing, the above claims have failed to patentably distinguish over the applied art.

Claim 3 is allowed.

The remaining references listed on forms 892 and 1449 have been reviewed by the examiner and are considered to be cumulative to or less material than the prior art references relied upon in the rejection above.

Ryoo et al (6,585,948) disclose an intermediate product of polyacetylene vapor polymerized in MCM-48 (example 4). The reference is not available as prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Kopec whose telephone number is (571) 272-1319. The examiner can normally be reached on Monday - Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Mark Kopec  
Primary Examiner  
Art Unit 1751

MK  
April 14, 2004